

**CLAIMS**

What is claimed is:

1. A bubble cap comprising:  
a riser having a top;  
a cap having a bottom and at least one side slit, the cap disposed in relation to the riser  
such that a liquid fluid and a gaseous fluid flow co-currently upwardly in a  
space between the riser and the cap; and  
a divider disposed in the space, and extending to a length at least 50% of a distance  
measured between the top of the riser and the bottom of the cap.
2. The bubble cap of claim 1 wherein the length of the divider is at least 70% of the  
distance between the top of the riser and the bottom of the cap.
3. The bubble cap of claim 1 wherein the length of the divider is at least 90% of the  
distance between the top of the riser and the bottom of the cap.
4. The bubble cap of claim 1 wherein the length of the divider is 100% of the distance  
between the top of the riser and the bottom of the cap.
5. The bubble cap of claim 1 wherein the divider is attached to the riser.
6. The bubble cap of claim 1 wherein the divider is attached to the cap.
7. The bubble cap of claim 1 wherein the divider is attached to both the riser and the cap.
8. The bubble cap of claim 1 wherein the bubble cap has at least two dividers.
9. The bubble cap of claim 1 wherein the bubble cap has at least three dividers.
10. The bubble cap of claim 1 wherein the bubble cap has at least six dividers.
11. The bubble cap of claim 1, further comprising a swirl director attached to the riser.
12. A mixing device having a plurality of bubble caps according to claim 1.
13. A mixing device having a bubble cap of claim 1 wherein the bubble cap, having at  
least one slot, is positioned with respect to a distribution plate and the bottom of the  
cap is positioned at least 1.5 inches from the distribution plate.

